

Multi-Modal: More Than Cars



Linda M. Osiecki
Linda.Osiecki@delaware.gov

Public Transportation Networks

Roads



Pedestrian & Bicycle Facilities



Transit



Multimodal Transportation Networks

Interconnected pedestrian and bicycle infrastructure makes walking and bicycling a viable transportation choice for everyone and this contributes to the health, equity, and quality of life of our communities.



Source: FHWA

**Achieving Multimodal Networks:
Applying Design Flexibility and Reducing Conflicts**

DelDOT

Pedestrian Facilities – Investment Levels

Bicycle Lanes – Roads and Entrances

Transit – Bus Stops

How proximity to public transit affects home values

- **Single-family homes: 2% to 32%**
- **Condos: 2% to 18%**

Sources: Realtor.com

July 7, 2017, ConstructionDive



Realtors

- Walk Score
- Transit Score
- Bike Score

Source: Redfin.com

1463 Chestnut Grove Road

Dover, Delaware, 19904

Commute to **Downtown Dover** 

 16 min  27 min  60+ min [View Routes](#)

 **Favorite**

 **Map**

 **Nearby Apartments**

[Looking for a home for sale in Dover?](#) 

Walk Score

0

Car-Dependent

Almost all errands require a car.

Transit Score

0

Minimal Transit

It is possible to get on a bus.

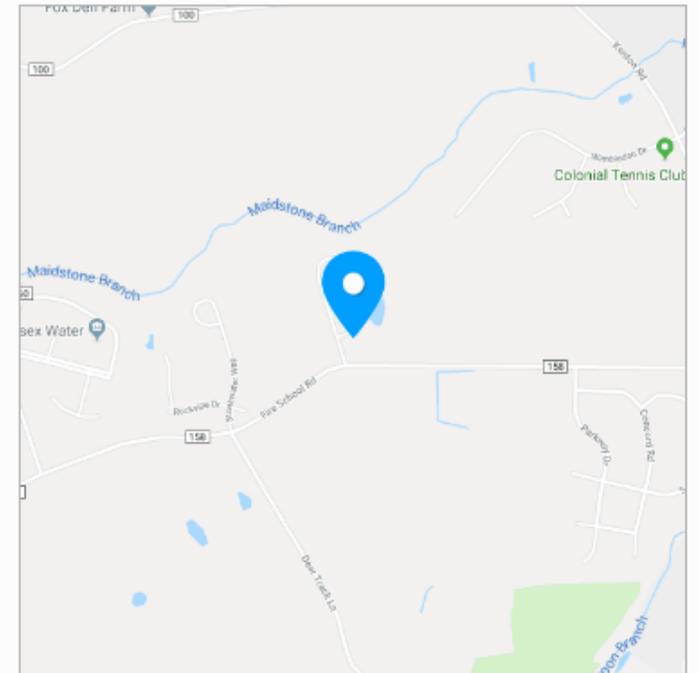
Bike Score

30

Somewhat Bikeable

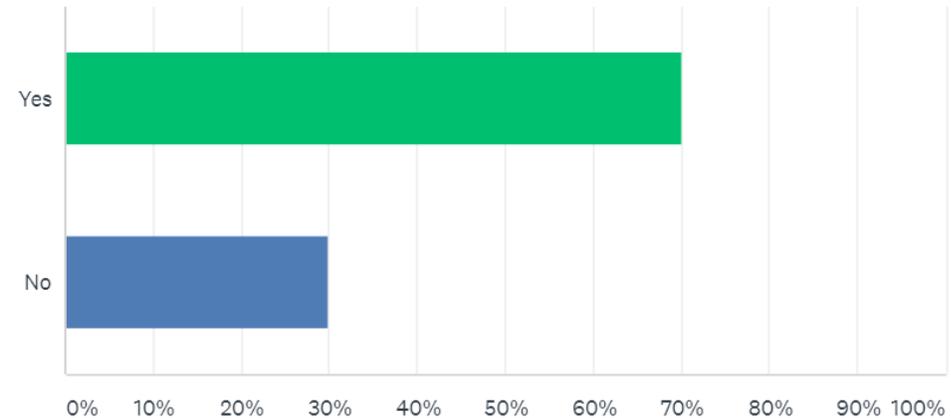
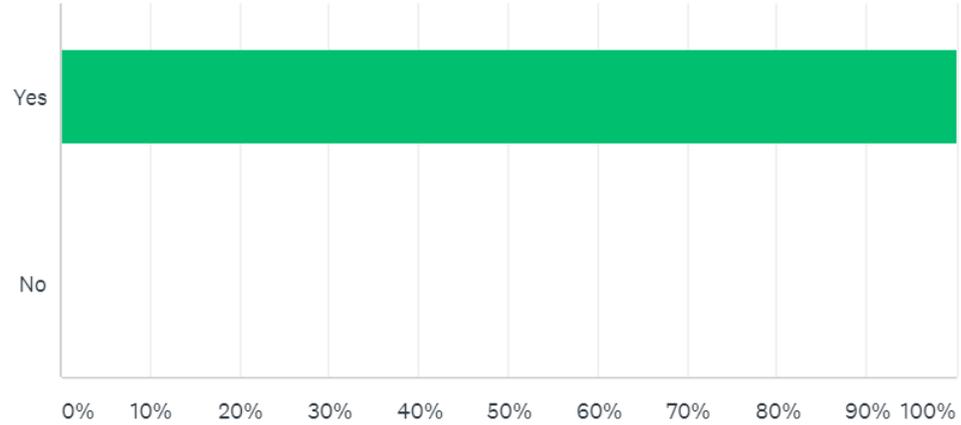
[About your score](#)

[Add scores to your site](#)



Poll of 9 College Students

- Pedestrian
- Transit
- Bike



College: William & Mary

One in three Americans is age 50 or older

Is your community a great place for people of all ages?

**By 2030, one out of every five people
in the United States will be 65 or older**

Will your community be ready?

Visit us often at [AARP.org/livable](https://www.aarp.org/livable)

Information and inspiration for local leaders

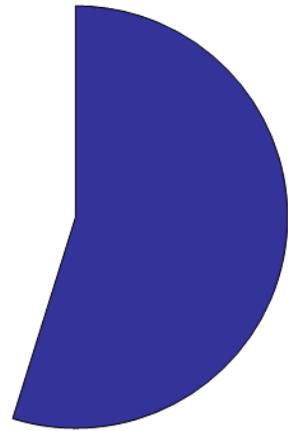


**Most older adults
want to stay
in their homes and
communities
as they age.**

Source: AARP



75–79 Years



55.9%



Brault, 2008



In a livable community, people of all ages can ...



Go for a walk



Cross the streets



Ride a bike



Get around without a car



Live safely and comfortably



Work or volunteer

About Specific Disabilities

Neurological disabilities

Physical and Mobility disabilities

Speech disabilities

Learning disabilities

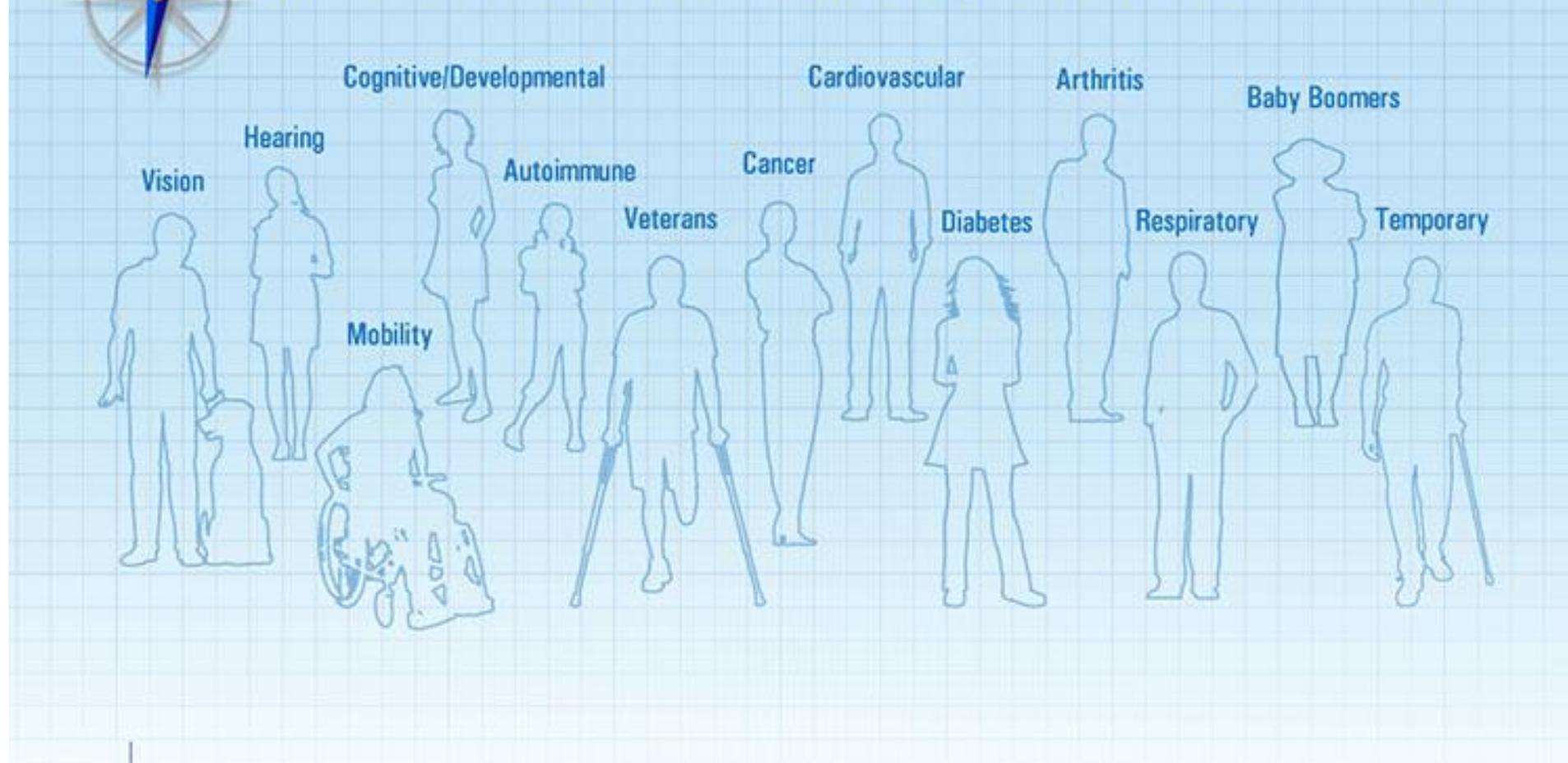
Psychiatric disabilities

Hearing disabilities

Visual disabilities

Intellectual disabilities





Various Types of Disabilities



Do you have or do you have a friend or family member that has a disability?

Yes

No



Walking Aids



About Visual Disabilities...

- 1.8 million people have a severe visual impairment or blindness

Delaware: 19,200 in 2016

National Federation of the Blind

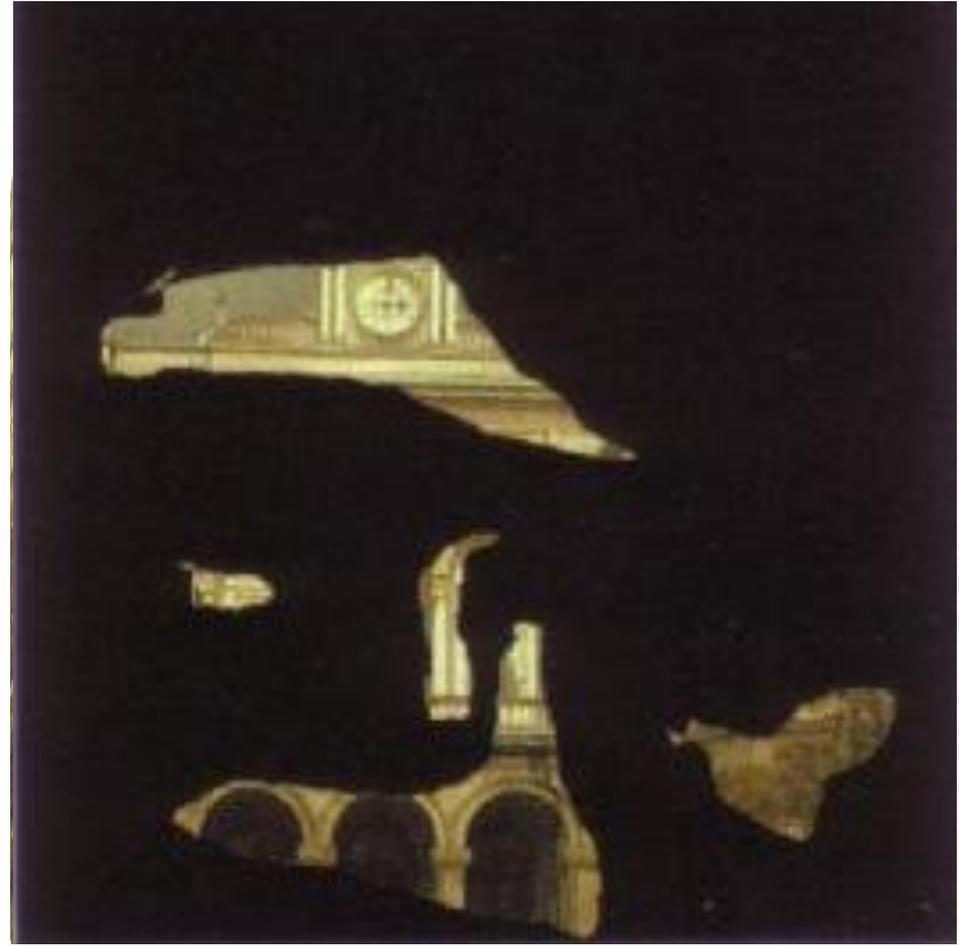
- Varying levels of visual disability
- Not all people with visual disabilities read Braille
- Many new developments in IT aid people with visual disabilities

Steinmetz, 2006



National Network
*Information, Guidance and Training on the
Americans with Disabilities Act*





Mobility Aids

- White Cane
- Guide Dog
 - Seeing Eye Dog
 - seeingeeye.org



Barriers





Barriers

Barriers

tree roots, tree branches and bushes





Barriers

Barriers

Debris, mud, etc.



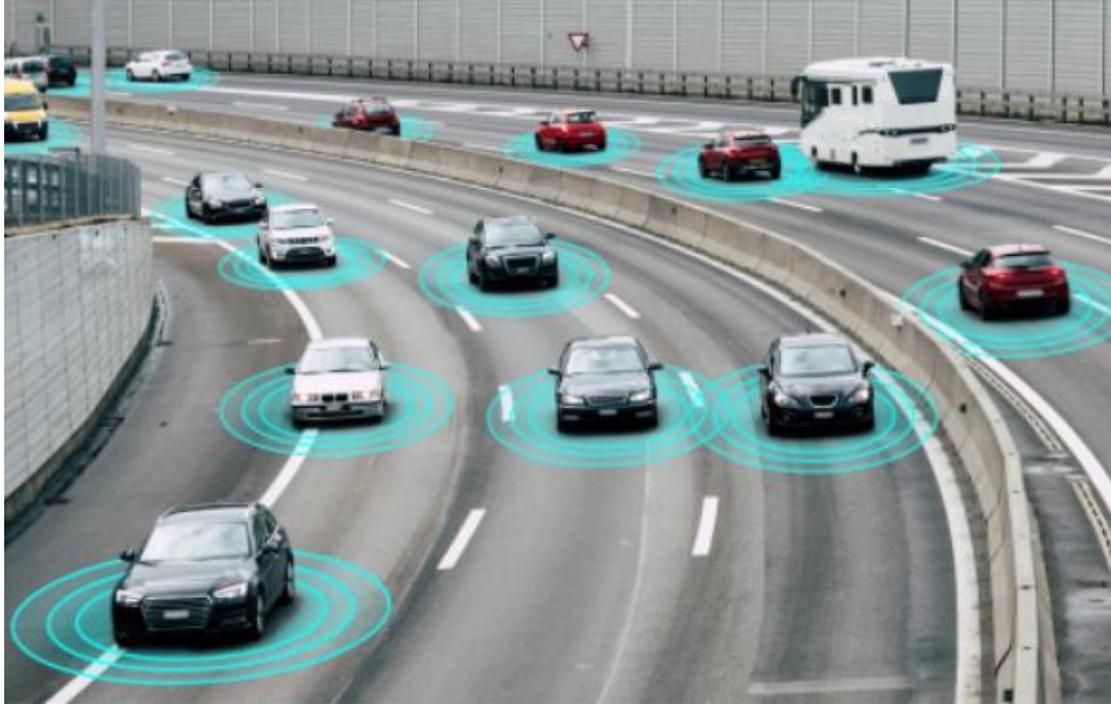


**Ponding
becomes
ice in
winter**

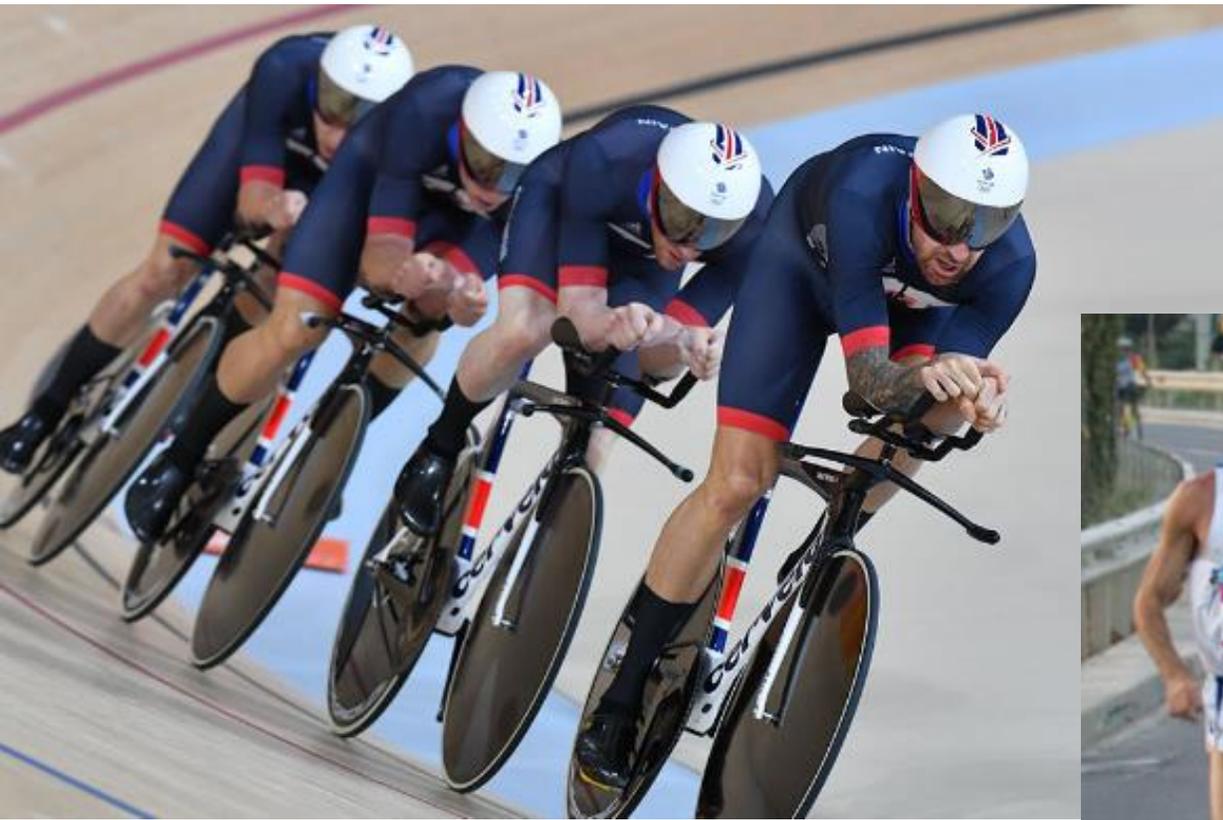
Design Vehicle



Design Vehicle



Design Vehicle



Design Vehicle



Disability Statistics

Cornell University

www.disabilitystatistics.org/



[SOURCES](#) [FAQ](#) [GLOSSARY](#) [HELP](#) [LOG IN](#)

Disability Statistics

Online Resource for U.S. Disability Statistics

FIND Disability Statistics

Select a topic below to access the disability statistics interactive search tool.

American Community Survey (ACS)

2008-2017 [?](#)

- Prevalence
- Employment Rate
- Not Working but Actively Looking for Work
- Full-Time / Full-Year Employment
- Annual Earnings
- Annual Household Income
- Poverty
- Supplemental Security Income (SSI)
- Educational Attainment
- Veterans Service-Connected Disability
- Health Insurance Coverage (and Type)

DOWNLOAD Disability Status Reports

National and state-level reports presenting prevalence and relative economic status of people with disabilities

2017 Disability Status Report Webinar 1/29/2019 2-3pm EST

[Register](#)

Status Reports: PDF

United States

2017

[Get PDF](#)

[PDF en Español](#)

ACCESS Research Tools

Detailed information on dozens of national level disability data sources

Rehabilitation Dataset Directory

The Rehabilitation Dataset Directory is an easy to use searchable database to help rehabilitation researchers identify datasets relevant to their areas of interests.

[View Webinar](#)

Rehabilitation Research Cross-dataset Variable Catalog

The Rehabilitation Research Cross-dataset Variable Catalog is a user friendly way to explore a wealth of variables organized by topics (including disability and health conditions, healthcare, health behaviors and ...)

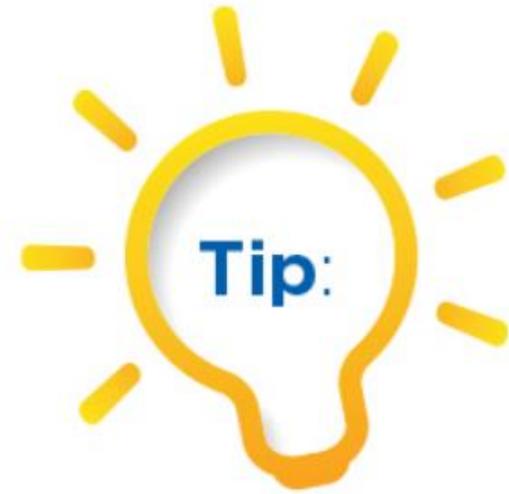
Pedestrian Infrastructure

- **Sidewalks & Shared Use Paths**
- **Curb Ramps/Personnel Connections**
- **Pedestrian Pushbuttons and Pedestrian Signals**
- **Pedestrian Street Crossings**
- **Bus Stops**



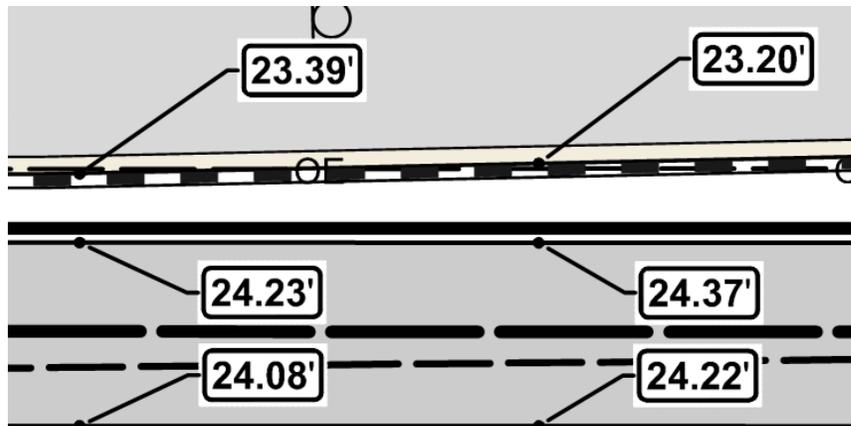
Cross Slope

Proposed cross slope shall not exceed 2.0% max.



Spot elevations:

- **25' intervals**
- **Back and front**
- **Changes in grading**



Curb Ramp & Pedestrian Pushbutton Aligned with Pedestrian Crossing





Pedestrian Infrastructure

**“Every bus trip
begins and ends
with a
pedestrian trip...”**

Source: Chapter 5, TCRP 163



Transit Infrastructure

- **Bus stops – Boarding and Alighting Area**
- **Shelters and Benches**
- **Trash Receptacles**
- **Accessible Route to Shelter, Sidewalk and Curb Ramps**

DART - 2017

Fixed Route

over 7.5 million trips



Boarding and Alighting Area

5' wide min.
8' long min.



Bus Stop



Bus Stop

- Boarding and Alighting Area
- Full Height Curb
- Trash Receptacles
- Accessible Route to Shelter, Sidewalk and Curb Ramps
- Bus Stop Sign at Far Side of Stop
- Trash Receptacle Pad



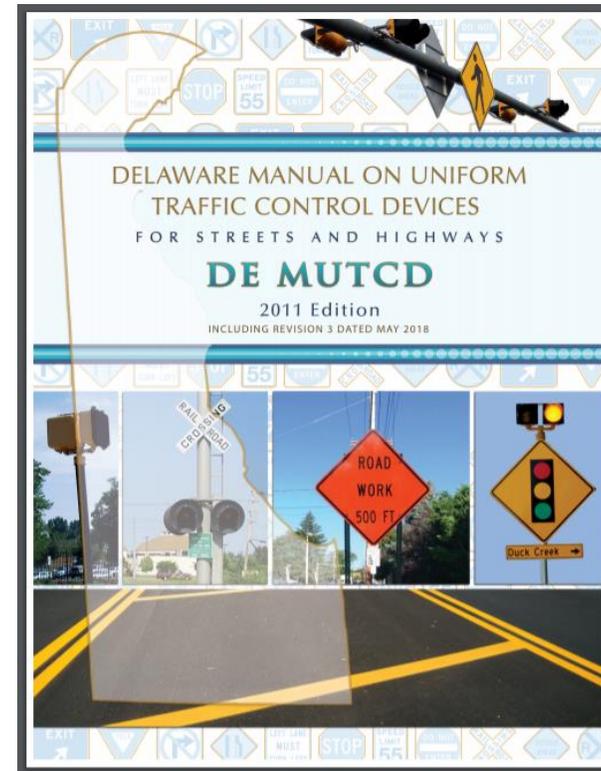
Bicycle Infrastructure

- Shared Use Paths
- Bicycle Lanes



Bicycle Infrastructure

Follow the current
DE MUTCD for
signing and striping
at entrances.



Roundabouts

Design the entire roundabout for bicycle and pedestrian improvements, not just one leg.



